Exhibit G

To

Response of Arlington Storage Company, LLC to

DEC's November 6, 2012 Notice of Incomplete Application

Arlington Storage Company

Seneca Lake Storage Facility

Modification Permit Application

Gallery 2 Expansion Project

Reservoir Suitability Report[1]

1. Introduction and Background

On August 17, 1995, the New York State Department of Environmental Conservation (NYSDEC) issued to New York State Electric & Gas Corporation (NYSEG) an Underground Storage Permit for the conversion and operation of an underground salt cavity then-owned by US Salt, LLC (US Salt) known as Gallery 1 (consisting of wells 27, 28, 46 and 59) and to become known as the Seneca Lake underground natural gas storage facility (Seneca Lake Storage Facility or Facility). The Facility (along with two pipelines and a compressor station) was also certificated by the New York State Public Service Commission (PSC) and the Federal Energy Regulatory Commission (FERC).[2] The approved storage capacity of Gallery 1 is 2.34 Bcf with a working gas capacity of 1.45 Bcf. It is a high-deliverability storage facility that can be filled to capacity in 20 days and fully withdrawn in 10 days. The Facility has been operated successfully and without incident since 1997. A general location map showing the existing operating facility and the location of Gallery 2 is attached as **Exhibit 1.**

In January 2010, NYSEG and Arlington Storage Company, LLC (Arlington) entered into a definitive agreement under which Arlington would acquire from NYSEG the Seneca Lake Storage Facility. With NYSEG's written consent, on or about July 1, 2010, Arlington submitted an application for an underground storage modification permit for Gallery 2, so that Arlington could expand the storage facility immediately after acquiring it. On July 13, 2010, NYSDEC Staff informed Arlington's counsel that the NYSDEC would not commence its review of Arlington's application until after Arlington completed its pending acquisition of the Seneca Lake Storage Facility.

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[1] This report was prepared with the assistance of Barry Cigich and Leonard Dionisio of Inergy, L.P. and Barry Moon of Inergy Midstream, L.P. This Report updates the Report previously submitted to the NYSDEC in July 2010.

[2] See Case 95-T-0248 – Application of New York State Electric & Gas Corporation for a Certificate of Environmental Compatibility and Public Need for the Construction of the Seneca Lake Storage Project Gas Transmission Facilities – Phase I, Opinion and Order Granting a Partial Certificate of Environmental Compatibility and Public Need, Opinion No. 95-15 (Sept. 14, 1995); Case 95-T-0248-Phase II, Opinion and Order Granting Certificate of Environmental Compatibility and Public Need; Opinion No. 96-15 (Jun. 26, 1996); Case 95-T-0248-Phase III, Order Approving Settlement and Amendment to the Certificate of Environmental Compatibility and Public Need (May 30, 1997). New York State Electric & Gas Corp, 81 FERC ¶ 61,020 (1997).

On July 13, 2011, Arlington acquired from NYSEG the Seneca Lake Storage Facility. As part of the acquisition, NYSEG's Underground Storage Permit was transferred to Arlington that same day. Shortly after the closing, but no later than August 2011, Arlington requested that NYSDEC Staff commence its review of Arlington's application in light of the closing of Arlington's acquisition of the Seneca Lake Storage Facility. Arlington has operated the Seneca Lake Storage Facility as a FERC-regulated natural gas storage facility since the date of its acquisition.[3]

Gallery 2 has previously been certificated by FERC. On August 27, 2001, Seneca Lake Storage, Inc. (SLSI), a wholly-owned subsidiary of NYSEG's then parent company, Energy East Corporation (Energy East), filed an application with FERC for the development and operation of Gallery 2 of the Seneca Lake Storage Facility. FERC issued a Certificate of Public Convenience and Necessity (Certificate) on February 14, 2002 (2002 Certificate).[4]

On or about October 26, 2001, Energy East submitted to NYSDEC an application on behalf of SLSI to develop and operate Gallery 2. For the most part, Energy East and SLSI provided the geological and environmental studies and reports contained with its FERC application, but added a long Environmental Assessment Form (EAF), information regarding financial security, a well status and condition report, transfer of well permits, a storage rights affidavit and an application fee. Sometime thereafter, NYSDEC issued a Notice of Incomplete Application, to which Energy East replied on June 21, 2002. Energy East never received a NYSDEC permit for Gallery 2 because it withdrew its application for commercial reasons.

This Reservoir Suitability Report presents information based on known geology of the salt deposits, US Salt's files, SLSI's previous application and subsequent Certificate from FERC and SLSI's previous application to NYSDEC for Gallery 2, public records and publications, competency of overlying formations, hydraulic pressurization of wells and caverns to demonstrate integrity of these caverns and the ability to safely retain natural gas, the previously submitted geomechanical evaluation, and more recent logging and sonars of the wells accessing Gallery 2.

2. Overview of Proposed Expansion, Facilities and Operation

Arlington plans to develop additional natural gas storage capacity at the Seneca Lake Storage Facility on property it owns. US Salt constructed these caverns (known as Gallery 2) by brining feed stock for their salt plant located in Watkins Glen, New York. This gallery was then used by others for propane storage over a twenty year time period.

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[3] Arlington has been granted a Part 157, Subpart F blanket certificate by the FERC, which authorizes Arlington to construct and operate certain facilities, including certain activities conducted for testing and development of new storage capacity. See FERC Docket CP08-96-000; 125 FERC ¶ 61,306, and FERC Docket CP10-99-000; 132 FERC ¶ 61,171. See also 18 C.F.R. §157.215.

[4] See FERC Docket CP01-434; 98 FERC ¶ 61,163 (2002). The Certificated Facility was never operated. See Section 3, infra., for a further discussion of the FERC Application and Certificate.

This propane storage ceased and all wells were plugged in 1989 in accordance with NYSDEC procedures.

Specifically, Arlington plans to convert Gallery 2 to natural gas storage service according to the plans set forth in this Report and generally consistent with the 2002 Certificate and the application submitted by Energy East (on behalf of SLSI) to the NYSDEC in October 2001. More specifically, Arlington seeks an Underground Storage Modification Permit to store up to an additional 0.55 Bcf of natural gas using expansion capacity at the Seneca Lake Storage Facility, consistent with the Mechanical Integrity Testing and geomechanical evaluation described below. Gallery 2 would have a total permitted storage capacity of 0.75 Bcf (0.55 Bcf working gas and 0.20 Bcf base gas) at a minimum wellhead pressure of 400 psi, maximum wellhead pressure of 1,669 psi, and a maximum daily storage withdrawal of 50,000 Mcf.

Prior to commencing storage service, Arlington will need to conduct the following activities for testing and development purposes:[5] (1) debrining Gallery 2 (using a 45 hp electric brine pump and temporary compressor on a skid to pressurize Gallery 2) and pumping the brine water to Arlington's affiliate, US Salt; (2) installing two pipeline segments[6] that would interconnect Gallery 2 with the existing 16-inch Seneca Lake Storage Facility gathering pipeline; (3) drilling two new wells (Well Nos. 30A and 31A), one into that part of Gallery 2 formed by Well 30 and one formed by Well 31, to serve as natural gas injection/withdrawal wells[7]; and (4) recompleting one formerly plugged and abandoned well (Well 45) to be used for debrining Gallery 2 and later converting this well to a monitoring well following completion of the debrining process. Subsequent to the commencement of storage operations, Arlington would plug and abandon wells 30 and 31, which were formerly used in the operation of the Gallery 2 caverns for propane storage.

Overall, the proposed surface construction activity (on land owned entirely by Arlington) in connection with this proposal is very limited and consists of connecting existing wells that make up Gallery 2 to the existing storage facility.

Arlington desires to commence storage service (i.e., injection and withdrawal of customer's gas for purposes of providing FERC-regulated storage service) in September 2012. Before using Gallery 2 for storage, Arlington will obtain FERC authorization to increase its certificated storage capacity for the Seneca Lake Storage Facility and place Gallery 2 into storage service.[8]

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[5] Arlington has existing FERC authorization to perform these testing and development activities.

[6] These segments (165 feet of 16-inch and 190 feet of 8-inch pipeline) total less than what had previously been approved (600 feet of 8.625-inch pipe) by FERC thereby reducing impacts. There will also be a temporary, above-ground 8" pipe from the temporary compressor to tie into the well head valves. The distance from the compressor to the tie-in will be approximately 70 feet.

[7] Permits to drill these wells as stratigraphic wells were issued in April 2012. Prior to the commencement of storage operations, these wells would be converted to injection/withdrawal wells.

[8] After constructing the Gallery 2 facilities and completing initial testing, Arlington will file an abbreviated application with the FERC requesting authorization to place the Gallery 2 capacity into storage

See **Exhibit 2,** which includes Map 1 which shows the location of Gallery 2, each well within the gallery, well status, well depth, and API numbers; and Map 2 which provides an overall site plan and affected map area, topographic and cultural features, laydown area and location of debrining lines.

3. 2002 FERC Certificate

As noted above, on August 27, 2001, SLSI filed an application with FERC for a certificate of public convenience and necessity pursuant to section 7(c) of the NGA to construct and operate Gallery 2. In an Order Issuing Certificates dated February 14, 2002, FERC determined that SLSI's proposal would serve the public interest by providing high deliverability storage service, without significant landowner or environmental impacts. A copy of FERC's Order is attached as **Exhibit 3**.

In its FERC application, SLSI proposed that Gallery 2 would have three entry wells, wells 30, 31, and 45, which had been previously plugged and abandoned after being used for propane storage. SLSI's development program for preparing the caverns for natural gas storage consisted of: (1) re-completing well 30; (2) re-entering and re-completing well 45; and (3) drilling a new well (then numbered 62) into the eastern lobe of the Gallery as replacement for the plugged well 31. Arlington has updated this plan, and its Cavern Development Plan is described in Section 13 below.

In its FERC application, SLSI estimated that Gallery 2's total capacity was 768,480 Mcf at a maximum wellhead pressure of 1,669 psi, including an estimated 172,680 Mcf of cushion gas at a minimum wellhead pressure of 400 psi. Therefore, SLSI estimated a working gas volume of 595,800 Mcf, and a maximum daily storage withdrawal rate of approximately 50,000 Mcf. SLSI stated that no permanent compression facilities would be required to be built (there is existing compression serving Gallery 1), but that a temporary 400 horsepower skid mounted compressor would be needed for approximately 100 days to complete the debrining of Gallery 2.

SLSI stated that the existing facility would provide the compression needed for the operation of Gallery 2 facility through the existing compressor station. In addition, operation and maintenance of the proposed storage facility would integrate into the existing control system.

Based on estimates of flows and working gas volumes, SLSI proposed maximum injection capability of 21 days and a withdrawal period lasting 11 days. Based on these injection and withdrawal rates, the working gas could be cycled approximately 12 cycles per year under most favorable conditions.

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service and to provide services to customers using the Gallery 2 capacity, in accordance with Arlington's FERC Gas Tariff. Arlington is not allowed to store gas for customers until FERC issues an order authorizing such activity. The abbreviated application will not require an environmental review for the then-constructed facilities; however, FERC's regulations will require Arlington to submit annual reports describing in detail its blanket certificate projects and the environmental clearances it has obtained from state and federal agencies.

SLSI stated that there would be little or no adverse effect or impact on landowners and communities, and that the impact on landowners would be minimal and mitigated. Specifically, SLSI stated that all construction activity it had proposed related to land owned by US Salt (now owned by Inergy) and that there were no residences within 1,000 feet of the proposed project site. Accordingly, no specific rights-of-way were required. Additionally, SLSI stated that there would be very little above-ground construction activity; only 4.8 acres of surface land would be affected, of which only 2.0 acres would be temporarily disturbed and only 0.34 acres would be permanently used during project operations. Therefore, FERC found that adverse impacts on landowners along and proximate to the proposed project would be minimal and would be outweighed by the benefits that the project would be expected to provide.

FERC's environmental staff prepared an environmental assessment (EA) for SLSI's proposal (based on the Environmental Report submitted with the FERC Application and submitted herewith, along with a completed Full EAF). The Environmental Report analyzed water resources, vegetation, wildlife, federally listed threatened and endangered species, cultural resources, geology, soils, land use, aesthetics, air quality, noise quality, and alternatives. FERC concluded that if SLSI implemented its proposed mitigation measures, construction of the natural gas storage project would not result in any significant environmental impacts.

After analyzing all information provided by SLSI, FERC concluded that the existing caverns' geological and engineering parameters were well defined. Further, FERC found that SLSI's development plan for the existing storage cavern was feasible. Thus SLSI's certificated facilities included: (1) two salt caverns (Gallery 2) with 768,480 Mcf storage capacity; (2) 600 feet of 8.625-inch steel pipeline; (3) a temporary, 400 horsepower skid-mounted natural gas-powered compressor; and (4) metering and appurtenant facilities.

4. Regional and Site Geology

4.1 Overview

The Watkins Glen brine field, located in Schuyler County, is in the south central part of New York State, along the west shore of Seneca Lake. See the general location map in **Exhibit 1.** It is approximately 2 miles north of the village of Watkins Glen. Physiographically, the region is part of the Finger Lakes district of the Allegheny plateau that has been peneplaned, uplifted and glaciated. Rocks that outcrop in the area are Devonian Age sedimentary formations that dip gently to the south. The terrain rises steeply across the site toward the west from the lake shore at about 270 feet/quarter mile. The site is covered with native vegetation.

Sediments encountered by wells drilled in the brinefield range in age from Upper Devonian, Genesee shales, to the Upper Silurian, Salina group, Syracuse salt and underlying Vernon shale. A stratigraphic column is included in **Exhibit 4**. See also cross-sections referenced in Section 4.2 below. Sediments are composed of shales, sandstones, limestone and dolomites with the shales of the Middle Devonian, Hamilton group, being 800 feet in thickness and separated from the upper Devonian shales by about 30 feet of Middle Devonian, Tully limestone. The Hamilton group is underlain by the Middle Devonian, Onondaga limestone that overlies the Lower Devonian Oriskany sandstone. The Oriskany is rather sporadic in occurrence and has not been identified in all wells.

Below the Oriskany, sediments of the Upper Silurian, Salina group, Bertie formation are encountered and consist of limestone, dolomite, shale, anhydrite and evaporate salt beds. The salt being dissolved is part of the Syracuse salt formation that is a member of the Salina group of the Upper Silurian system. It consists of six distinct beds with the possibility of a thin salt stringer some 40 feet below the sixth salt. See **Exhibit 4**. The salt beds are intensely folded into a series of local east-west anticlines and synclines with only a few tens of feet from crest to crest (Jacoby, 1963, p. 508). It is likely that the salt and incompetent shales of this section flowed plastically and absorbed the shock of the regional tectonic force during the Mesozoic era, and gave rise to folding. This is apparent when the structure of the salt is compared to the overlying sediments. The overlying sediments are characterized by broad, gentle east-west synclines and anticlines with axes generally paralleling the sharp folds of the underlying evaporites. See **Exhibit 5**. On the basis of the cores from the Watkins Glen brine fields, some beds appear to pinch out completely while others double in thickness over a distance of 300-400 feet.

4.2 Discussion of Geologic Cross-Sections, Faults Analysis and Jacoby

At the Department's request, Arlington has reviewed the papers of C.H. Jacoby regarding the Watkins Glen brine field.

Jacoby writes that faulting may be present in the brine field, resulting in alternating thinning and thickening of both salt and insoluble layers. However, that faulting is limited to the Salina salt interval, since Arlington's interpretation is that there is no indication the faults extend into overlying beds or the underlying Vernon shale.

Jacoby is correct in that the rafting of the salt from the southeast has caused rupture of the interbedded, non salt layers. However, the plasticity of salt as the gross salt thickness was thrust to the present state along the decollement has resulted in the closure of any porosity around the "faults", enclosing them with salt. Experience at other bedded salt locations has shown that whenever a layer of insolubles is undercut and falls into the bottom of a developing cavern, the space can be recovered by working the well over and adding new tubing to the injection string.

The geologic and geophysical data collected in the area of the US Salt brine field indicates that there has been no recent tectonic activity. There may not have been any tectonic activity in this area since the Appalachian Orogeny approximately 225 million years ago.

The Appalachian Orogeny took place starting in the Late Devonian period and continued into the Permian. This entire region of North America was subjected to compressive forces that were acting in a north-south direction creating a series of parallel folds and thrust faults that strike from east to west across the area. In addition, some high angle strike-slip faults oriented north to south have deformed the Silurian and Devonian Rocks in this immediate area.

As more wells have been drilled into salt and underground mines developed, geologists have come to a better understanding of the mechanical characteristics of salt and its response to the tectonic forces that create folding and faulting. "Faulting is a major component of most hydrocarbon traps. Many faults form the boundary plane of a pool of oil and gas, and this may be due to the fact that the fault is tightly sealed and holds the petroleum from further migration" (Levorsen, 1954). Thus, the existence of faulting does not indicate that there is a pathway for fluids to migrate.

At the US Salt brine field, Jacoby and Dellwig reported a vertical north to south trending strike-slip fault located east of brine wells 29, 37 and 41. A fault in this location puts it in or very close to NYSEG's existing gas storage cavern (Gallery 1). However, since natural gas has been stored in Gallery 1 with no problem and recent pressure testing results indicated no pressure loss in this gallery, the conclusion that must be reached is that the fault Jacoby and Dellwig identified is either not present or sealed. In the same paper Jacoby and Dellwig concluded that "[t]he structure contour map on the top of the salt gives no indications of the faults breaking up into the overlying sediments." Therefore, all of their discussion of faulting is confined to the salt and the intervening rock layers which are known to be plastic.

The Camillus Shale directly overlies the Syracuse salt sequence. This shale sequence is approximately 80 feet thick across the Gallery 2 area. As illustrated on the attached Camillus Shale Isopach Map (**Exhibit 6**), the thickness of the Camillus Shale varies from 78 to 82 feet thick across the brine field. The fact that the thickness of the shale is so uniform confirms the interpretation that the Camillus Shale cap rock has not been compromised by faulting. If faulting had occurred, significant shortening by normal faults or lengthening in response to reverse faulting would be reflected in the thickness of the Camillus Shale.

In addition, a structure map (**Exhibit 7**) has been constructed on the base of the Camillus Shale reflecting approximately 30 feet of dip to the west across the brine field. The consistent dip represented on the structure map reinforces the interpretation that no faulting extends into the Camillus Shale cap rock.

Cross-sections have been created to show the gallery relationships between the wells in each gallery along with the overlying formations of Camillus Shale, Bertie anhydrite, Helderberg limestone, Oriskany sandstone, Onondaga limestone and Marcellus shale. The casing seat deviations are shown only where they fall along the cross-section line. The original total depths of the wells are shown and the lowest sonar depths of each well are recorded. The rubble pile thickness is the difference between the original total depth and the bottom depth recorded by the latest sonar survey.

The cross-sections (one North-to-South and the other West-to-East) also illustrate the absence of faulting and the uniformity of the Camillus Shale in the vicinity of Seneca Gallery 2. The cross-sections illustrate the distinct salt and "rock" units using the Rickard standardized salt unit naming convention. The cross-sections show all sonar survey outlines (appropriately labeled). See **Exhibit 8**. The cross-section locations are shown on the map included in Exhibit 2, Map 1.

In conclusion, having reviewed all the evidence of the past operating data, geological and engineering studies (including a geomechanical evaluation) and the results of sonars, hydrotests, vertilogs, various types of other logs, and the successful pressure tests, Inergy and Arlington, as an experienced operator, has concluded that the suitability of these caverns to store natural gas is assured and confirmed.

5. Historical Development of Salt Caverns and Previous Usage for Hydrocarbon Storage

International Salt Company constructed the original gallery and sold it to AKZO Salt Inc., who sold it to US Salt. It began with the drilling of well 30 in 1958, then well 31 in 1961 and well 45 in 1968. The gallery was used for brine production until 1964, then through an agreement with Texas Eastern Transmission Company (now TEPPCO), was used for propane storage until 1984.

According to US Salt records, up to approximately 1,000,000 barrels of propane were stored in Gallery 2 during the 20 year period referenced above; this estimate is based on a review of sonar survey void space and the rubble pile to store hydrocarbons. Well 45 was drilled between wells 30 and 31 as the brine displacement vehicle for product injection and withdrawal into and from wells 30 and 31. Calculated porosity in the rubble pile is about 32% and the storage system worked well during the storage contract life. The wells were plugged and abandoned in 1989 after the storage contract terminated with TEPPCO since they required a larger volume of storage than what US Salt was willing to provide.

6. Well Construction and Well History

6.1 Overview of Gallery 2 Well History

Wells 30 and 31 were drilled in 1958 and 1961, respectively. Well 45 was drilled in 1968. They were used for brine supply until being converted to propane storage in 1964. Propane storage continued until 1984 when product was removed and the wells became inactive until plugging and abandonment in 1989. Sonars have been performed for each well accessing Gallery 2. Sonars were performed for well 30 in 1978, 1981, 1997 and 2011. Sonars were performed for well 31 in 1978 and 2011. A sonar was performed for well 45 in 2011. Sonars are discussed in Section 11 below. All logs and sonars are included in **Exhibit 9.** Well 30 was re-entered in late 1997 when SLSI planned to perform a nitrogen/brine MIT with the intention of converting Gallery 2 to natural gas storage. The evaluations conducted when well 30 was re-entered are discussed in Section 7 below.

6.2 History of Well 30

Well 30 was plugged and abandoned on October 6, 1989. The work was performed in accordance with NYSDEC plugging permit no. 8925-P. Well 30 was used for propane storage from 1964 to 1984.

A bridge plug was placed in the cemented casing by wireline at [redacted] A workstring was run to the top of the plug and cement was placed from [redacted].

In December 2011, additional logging and evaluation was performed of well 30. A Gamma Ray Segmented Bond Log and High-Resolution Vertilog were performed. In addition, Baker-Hughes prepared an inspection report and a summary evaluation of the cement bond. These logs and evaluations are included in **Exhibit 9**.

6.3 History of Well 31

Well 31 was plugged and abandoned on October 16, 1989. The work was performed in accordance with NYSDEC plugging permit No. 8924-P. Well 31 was used for propane storage from 1964 to 1984.

An [redacted] prior to performing any other work. The 4" flush joint tubing string was pulled from the well, then [redacted] The well [redacted]. Cement was then placed in the well [redacted].

In December 2011, additional logging and evaluation was performed of well 31. A Gamma Ray Segmented Bond Log and High-Resolution Vertilog were performed. In addition, Baker-Hughes prepared an inspection report and a summary evaluation of the cement bond. These logs and evaluations are included in **Exhibit 9**.

6.4 History of Well 45

Well 45 was plugged and abandoned on October 12, 1989. The work was performed in accordance with NYSDEC plugging permit no. 8927-P. Well 45 was used for water and brine displacements for propane stored in wells 30 and 31 from 1964 to 1984.

The 5-1/2" tubing string was pulled from the well. The [redacted]. A bridge plug was placed [redacted]. Cement was placed [redacted]

In December 2011, additional logging and evaluation was performed of well 45. A Gamma Ray Segmented Bond Log and High-Resolution Vertilog were performed. In addition, Baker-Hughes prepared an inspection report and a summary evaluation of the cement bond. These logs and evaluations are included in **Exhibit 9**.

A copy of well schematic and plugging reports (taken from production files prepared for AKZO Salt, Inc.) for wells 30, 31 and 45 are attached as **Exhibit 10**. A Well Status and Condition Report is attached as **Exhibit 11**. Directional surveys performed when wells 30, 31 and 45 were recently re-entered in December 2011 are attached as **Exhibit 12**.

7. Evaluation of Well and Cavern Integrity

To ensure that Gallery 2 is competent for natural gas storage, NYSEG hired PB-KBB in 1997 to re-enter Gallery 2 and perform a Mechanical Integrity Test (MIT). Gallery 2 was re-entered through well 30, and the MIT was performed.

The MIT of the cavern as proposed was to consist of a pressure test with brine and then a nitrogen interface test on well 30. The MIT with brine proved the cavern to be capable of storing natural gas. Arlington proposes that a brine interface test be performed prior to debrining and placing Gallery 2 into storage service.[9]

As noted above, Gallery 2 was re-entered through well 30. When the bridge plug in the 7" casing set at 2,296' was drilled out [redacted], with a [redacted]. The well [redacted] Based on the [redacted] in well 31. The cavern had [redacted] (The wells were plugged in 1989.) This is the most important factor considered since [redacted]

A digital pressure/temperature recorder, a deadweight tester, and a circular chart recorder were set up on well 30. Between December 19 and 21, 1997, the gallery was pressured up by injecting brine into well 30 until the [redacted] as measured by the deadweight tester. This [redacted] was selected because it was [redacted] encountered and [redacted]. The wellhead brine test pressure was selected based on a [redacted], the shallowest point in

[9] Arlington does not believe future brine interface tests are necessary or appropriate once Gallery 2 is placed into storage service.

the gallery. This ceiling depth is equivalent to [redacted] It was anticipated that some [redacted] and it was determined that [redacted] would be sufficiently above the target [redacted] so that no additional [redacted]

The cavern was allowed to stabilize from December 22-28, 1997. During that period the digital pressure/temperature recorder and chart recorder captured continuous wellhead pressure readings. NYSEG station operators performed inspections every two hours, recording brine cavern gauge pressures, annulus gauge pressures, and ambient temperatures. An experienced local geologist familiar with the geology of the Watkins Glen area was retained by NYSEG to monitor the cavern test during this period, including performing an official daily deadweight test of the cavern brine pressure; recording the annulus gauge pressure; inspecting the two other plugged Gallery 2 wells (wells 31 and 45) for changing conditions to insure plug integrity; reviewing the recorded information to date for reasonableness; and reporting findings.

After allowing the cavern to stabilize, the brine test was officially started on [redacted] During the [redacted] the [redacted]

Based on the MIT, PB-KBB [redacted] This [redacted]

- After [redacted] The cavern [redacted]

- The results of the cavern MIT indicate a [redacted].

To convert well 30 to gas storage it was [redacted]. A [redacted] was also recommended to [redacted].

At the conclusion of the MIT, PB-KBB's recommendation included the following:

- The recommended [redacted]. From the available historical data, this point would be the [redacted]. This yields a calculated maximum gas storage wellhead pressure of 1669 psig.

- The recommended minimum storage wellhead pressure should be 400 psig, equivalent to that in Gallery 1. This recommendation was based on the following:

- Operating experience for [redacted] justify this [redacted]. The 400 psig minimum storage wellhead pressure is equivalent to a [redacted]. Gas storage caverns in Michigan and Canada have operated successfully for many years at [redacted]

- From a facility operations standpoint, the ability to operate both Gallery 1 and Gallery 2 at the same minimum pressure simplifies the gas injection and withdrawal process.

- Assuming approximately 1.0 million barrels of volume in Gallery 2, the estimated gas storage capacity operating at a maximum wellhead pressure of 1,669 psig was noted as follows:

  - Total gas storage - .768 Bcf;

  - Working gas storage - .595 Bcf;

  - Base gas - .173 Bcf.

The MIT Report, dated May 1998, is attached as **Exhibit 13**.

Subsequent to the [redacted] a geomechanical evaluation of Gallery 2 was then performed. This is discussed in Section 8.2.

8. <u>Suitability of Caverns to Store Natural Gas</u>

8.1 <u>Core test results</u>

The attached core log description reports are submitted to support this Reservoir Suitability Report. <u>See</u> **Exhibit 14**. The core descriptions verify much of what Jacoby reported in his papers including the fact that the insoluble fragments and "faults" are all enclosed with recrystallized salt and do not create a situation where an insoluble fall into the cavern means that the developing space must be abandoned.

The caprock across the area and over the caverns are dense, hard and relatively contiguous shales and dolostone/dolomites with compressive strengths over 10,000 psi. Those high compressive strengths and solid correlation of beds across the brine field attest to the competent roof span shown in the sonar surveys. Faulting in the salt is strictly limited to the plastic layers of salt that have caused the interbedded insoluble layers to float within the plastic salt layers and to move irregularly – in some cases, acting like faulting. The core descriptions in the Seneca Lake storage package describe slickensides and offset layers of insolubles caused by plastic movement of the salt layers, and all irregularities in the cores have been recemented and surrounded by recrystallized salt.

A study of the core descriptions from wells 58 and 59 (see Section 8.2 below) describe broken pieces of anhydrite, dolomite, shale, dolostone, with numerous slickensides, gouge and brecciation, and all of the cores are either surrounded by salt or the fractures are filled with salt. The same conditions occur in other salt cores that have been reviewed at Savona, Avoca, Silver Springs and Dale, New York. This is not surprising since all of these locations are in the same salt basin.

8.2 Rock Mechanics and Geomechanical Evaluation

The attached rock mechanics report (**Exhibit 15**) for wells 58 and 59 and geomechanical evaluation (see **Exhibit 16**) have concluded that Gallery 2 can be used for natural gas storage and that doing so does not affect the integrity of adjacent wells, caverns and galleries, including the natural gas stored to the east in Gallery 1.

RESPEC/PB-KBB conducted the geomechanical evaluation of Gallery 2 with regard to the storage of natural gas and issued a report in April 2002. In 2001, RESPEC was commissioned by PB-KBB inc., to evaluate the suitability of Gallery 2 for natural gas storage. Gallery 2 was formed by wells 30, 31 and 45 and [redacted] Gallery 1 that is comprised of wells 27, 28, 46 and 59. Well 58 and its salt cavern [redacted].

To determine the elastic properties of the salt and the overlying Camillus Shale several core samples from wells 58 and 59 were measured by laboratory testing. The [redacted]. Based on sonar surveys the [redacted]. Also the in situ temperature and regional stress were characterized in the finite difference model.

In the finite model the operational pressure of the reservoir was restricted to be at a [redacted]. RESPEC purposely set up the model to [redacted].

The finite difference model results show that Galleries 1 and 2 are [redacted]. The model shows that the [redacted].

The finite difference modeling that was performed on the cores taken from wells 58 and 59 for the Seneca Lake Storage project was based on the [redacted] That is, the wells/caverns would be [redacted], and then [redacted] during [redacted]. That [redacted] consisting of [redacted], and is a [redacted] of [redacted].

Based on the attached rock mechanics and geomechanical evaluation performed previously by NYSEG, Arlington submits that [redacted].

9. Review of Historic Earthquake Activity/Seismic Risk

In connection with its prior application to NYSDEC, SLSI provided an update to its Earthquake Database Search and this is provided as **Exhibit 17**. A base map compiled by the National Geophysical Data Center, updated using USGS data, is also included in this Exhibit.

To obtain even further updated data for the time period between 2001 (the date of the last report) and 2012, Arlington consulted the USGS National Earthquake Information Center's Earthquake Data Base. A 150 km radius centered on latitude 42.417 N longitude 76.892 W was investigated. The results indicate that the area continues to be a low seismicity area. Since the original report dated 2001, only five minor seismic events have been recorded within the survey radius. These events range from a low of 2.4 MDPAL to a high of 2.9 MDPAL and the closest event recorded was 101 km from the project area.

Based on the above, there are no risks involved at the site with earthquakes within ½ mile of any of the subject Gallery.

10. Sonar Reports and Surveys

On December 18, 1997, a sonar survey, gamma ray log and density log were run on well 30. The gamma ray log and density logs are discussed above in Section 6 and included in **Exhibit 9**.

The 1997 cavern sonar survey for well 30 showed a [redacted]. In plan view the sonar shows an [redacted]. The [redacted]. The gamma ray/density log found the 10-3/4" casing shoe at a depth of 2,501', [redacted]. The density log also showed a [redacted]. An X-Y caliper log run on January 4, 1998, [redacted].

Sonar surveys were performed on wells 30, 31 and 45 in November 2011. The sonar reports are included in **Exhibit 9**. For well 30, the sonar survey [redacted]. For well 31, the sonar survey [redacted]. For well 45, the sonar survey [redacted].

Arlington has no plans at this time for future sonar surveys in any wells after Gallery 2 is placed into service. Based on rock mechanics evaluations, [redacted] that [redacted]. See Sections 6.1 and 7 and the cross-sections included in **Exhibit 8** regarding past sonar surveys performed.

11. Minimum and Maximum Storage Pressures

As noted above, Arlington requests authorization to commence storage service for Gallery 2 at a minimum wellhead pressure of 400 psi and a maximum wellhead pressure of 1669 psi.

In the rock mechanics and geomechanical/finite difference evaluations being provided by Arlington with this Report, a [redacted]. The Gallery 2 [redacted]. Since the salt in the field is similar throughout, Arlington will, as a prudent operator, perform a brine interface test [redacted]. Since this [redacted]

Arlington will [redacted].

12. Cavern Development Plan

Wells 30, 31 and 45 (Gallery 2) were used to store propane from 1964 to 1984. Two new wells, Well Nos. 30A and 31A, will be drilled in the storage field, initially as stratigraphic wells and will later be converted, upon application to the Department, to injection/withdrawal storage wells. Arlington's NYSDEC-approved well drilling procedures to drill wells 30A and 31A are attached as **Exhibit 18.**[10] Well 30A will be directionally drilled into that part of Gallery 2 formed by well 30 and well 31A will be directionally drilled into that part of Gallery 2 formed by well 31. Well 45 will be used for debrining Gallery 2 and later will be converted to a monitoring well following completion of the debrining process. Finally, wells 30 and 31 will once again be plugged and abandoned.

[10] These procedures were submitted to NYSDEC on April 13, 2012 (as revised May 4, 2012). Drilling permits were issued on April 24, 2012.

An approximately 190-foot, 8-inch diameter and 165-foot, 16-inch steel gas pipeline, referred to as the "interconnecting pipeline," will be installed to connect the storage caverns to the existing 16-inch pipeline that connects the existing Gallery 1 cavern to the Seneca Lake Storage facility.[11] This pipeline is shown on **Exhibit 2, Maps 1 and 2**. The 8-inch pipe will be of welded construction with a [redacted]. The 16-inch pipe will be of welded construction with a [redacted]. The pipeline will be designed to operate at a maximum allowable operating pressure (MAOP) of 1,669 pounds per square inch (psi). A valve manifold system consisting of a series of tees, valves and flange connections will be installed between the wellheads and the pressure/flow control valves to accommodate the installation of a skid-mounted, temporary natural gas powered compressor.

At the conclusion of debrining Gallery 2 (described below), the temporary compressor will be removed and the line connections will be sealed with blind flanges.

Prior to issuance of an Underground Storage Modification Permit, Arlington will submit an application to convert well 45 from plugged and abandoned to a monitoring/observation well. Once plugging and abandonment is completed for wells 30 and 31, reports will be submitted to DEC.

13. Debrining Plan

In preparation for the commencement of storage operations, once wells 30A and 31A are drilled and completed and a nitrogen brine mechanical integrity test is completed, Arlington will for testing and development purposes inject Arlington-owned natural gas into wells 30A and 31A and withdraw brine from well 45 to debrine the gallery. Arlington will connect well 45 to the existing US Salt brine lines in connection with these activities.

A debrining system will be installed between the Gallery 2 cavern wells and the existing US Salt brine pipeline. The location of the Arlington interconnecting debrining system is shown on **Exhibit 2, Maps 1 and 2**. The debrining system will consist of a series of six-inch valves, a six-inch diameter pipe of welded construction [redacted], a 75-horsepower electric brine pump, and a brine control system. The proposed brine pipe will be [redacted] and is shown on **Exhibit 2, Maps 1 and 2**. A temporary skid-mounted natural gas powered compressor will also be necessary as part of the debrining operation. The temporary compressor is needed to pressurize the Gallery 2 cavern through new wells 30A and 31A to the maximum permitted wellhead pressure of 1,669 psi, in order to force the brine up well 45 to maintain a sufficient suction pressure to the brine pump.

US Salt will not require any additional facilities to process the brine.

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[11] There will also be a temporary, above-ground 8" pipe from the temporary compressor to tie into the well head valves. The distance from the compressor to the tie-in will be approximately 70 feet.

14. Subsidence Monitoring

Arlington's affiliate, US Salt, has been monitoring the elevations of wellheads and other subsidence monuments for decades and providing a report every 5 years.[12] Experience has shown that as many monuments show a reduction in elevation as show an increase in elevation. Much of the changes in elevation are due to the change in the weather from warm to cold. This phenomenon is universal and documented surveys show that there has been no significant subsidence across the field mainly due to the stiffness of the overlying formations. In addition, since obtaining its DEC Underground Storage Permit in 1995, NYSEG performed subsidence surveys of Gallery 1 with no significant subsidence observed. Since Arlington's acquisition of the Seneca Lake Storage Facility, a subsidence survey was performed in November 2011. The survey report is attached as **Exhibit 19**.

In light of this background but understanding DEC's desire to obtain information regarding potential subsidence after debrining, Arlington has proposed a Subsidence Monitoring Program for Gallery 2. In summary, primary control points (using existing monuments) outside the zones of influence of Gallery 2 will be used. These primary monuments will be thoroughly seated in bedrock and will be located using an accurate and repeatable GPS procedure based upon two sets of concurrent observations from two off-site High Accuracy Recovery Network stations. Secondary Subsidence Monuments will be established on each wellhead for monitoring potential subsidence within the salt zones of influence of Gallery 2. A baseline survey would be established prior to the commencement of debrining operations and a report developed consistent with the proposed Subsidence Monitoring Program and submitted to DEC. After commencement of debrining operations, periodic surveys would be performed and reports developed and submitted twice per year for the first year. Subsequent surveys for the next three years shall occur every year. Provided there are no detrimental indicators, all following surveys shall occur every two years.

Arlington's proposed Subsidence Monitoring Program is more specifically described in **Exhibit 19**.

15. Safety and Emergency Shutdown Systems

Since it will operate Gallery 2 in conjunction with the continued operation of the Seneca Lake Storage Facility, Arlington will continue to utilize the Facility Emergency Shut Down (ESD) System installed at the facility described in **Exhibit 20**. In addition, after the Underground Storage Permit was transferred to Arlington and in compliance with the transferred permit, Arlington submitted an Emergency Action Plan to DEC to address different emergency scenarios. This document is also included in **Exhibit 20**.

[12] US Salt's next subsidence survey will be performed in 2013.

16. Nitrogen Brine Interface Test

Deliberate over-pressuring of the well and cavern occurs when MITs are performed. The procedure for the nitrogen brine interface MIT is attached hereto as **Exhibit 21**. The purpose of the test is to show that the [redacted] that protects the Underground Source of Drinking Water (USDW) will not allow gas to penetrate those formations. The pressure to be used will be above operating pressures but still significantly below the safe working pressures of the pipe and cement, and even further below the lithostatic pressures above the cavern and the compression that the cavern roof and salt walls can withstand.

Arlington proposes to run a nitrogen brine interface test prior to the initial injection of gas. Given that the ongoing integrity of the Gallery can be assessed by observing pressures in the cavern, and no further solutioning will occur, there is no need to conduct future MITs or brine interface tests.

17. Storage Rights Ownership

A storage rights affidavit, storage rights tabulation, and storage rights map has been provided to the Department as **Exhibit 22**.

18. Environmental Review

A Full Environmental Assessment Form (EAF) is attached as **Exhibit 23**. In support of the EAF, attached as **Exhibit 26** is the complete Environmental Report submitted to FERC in 2001 and which supported FERC's Environmental Assessment for the 2002 Certificate.

Once well heads for new wells 30A and 31A are constructed pursuant to drilling permits issued in April 2012, a permanent [redacted] and the rest of the initially disturbed well pad location will be reclaimed with existing topsoil and seeded after drilling and wells are completed. Operation of Gallery 2 will [redacted], representing the well-heads and valves and controls for the interconnecting pipeline.

Existing access roads will be used to access the well pad locations and interconnecting pipeline construction locations.

Staging, pipe storage and laydown will be located within the existing gravel driveway area at the western most portion of the Project site.

Construction of the interconnecting pipeline will [redacted] Following construction, a [redacted] will be maintained. The brine pipeline will only have a [redacted]

All of the affected land described above is on property owned by Arlington or its affiliate, US Salt, in an area having extensive historical disturbance related to the prior and ongoing salt mining/production operations of US Salt and its predecessors.

In sum, there will be [redacted] associated with the development (including debrining activities) and operation of Gallery 2 and its integration into the existing Seneca Storage Facility. The existing FERC Resource Reports and the attached EAF support the issuance of a Negative Declaration under the State Environmental Quality Review Act (SEQRA).

19. References

a. Levorsen, A.I., 1954, Geology of Petroleum, W.H. Freeman & Co., San Francisco, 724 p.

b. Jacoby, C.H., Dellwig, L.F., 1974, Appalachian Foreland Thrusting in Salina Salt, Watkins Glen, New York, 4th International Symposium on Salt, Northern Ohio Geological Society, Inc., pp. 227-233

c. Jacoby, C.H., 1963, International Salt Brine Field at Watkins Glen, New York, Symposium on Salt, Northern Ohio Geological Society, Inc., 506-520

d. Jacoby, C.H., Use of Abandoned Solution-Mined Cavities for Storage of Plant Waste, Transactions, Society of Mining Engineers, AIME, Vol. 254, pp. 364-67, December 1973

e. Jacoby, C.H., Szyprowski, S., Paul, Dilip K., Earth Science Aspects in the Disposal of Inorganic Wastes, 4th International Symposium on Salt, Northern Ohio Geological Society, Inc., pp. 307-12

f. Coring Activities – NYSEG Well 59, Seneca Lake Storage Project, Watkins Glen, New York; Topical Report RSI-0655, RE/SPEC, Inc., January 1996

g. Mechanical Properties of Salt and Dolostone from AKZO Nobel Salt, Inc., Well No. 58 and NYSEG Well No. 59, Seneca Lake Storage Project, Watkins Glen, New York, Topical Report RSI-0668, RE/SPEC, Inc., January 1996

h. Geomechanical Evaluation of Natural Gas Storage in Gallery No. 2, Seneca Lakes Storage, Inc. Storage Project, New York, Topical Report RSI-1574, REPEC, April 2002

20. List of Exhibits

Exhibit 1 – General Location Map
Exhibit 2 – Map 1 – Gallery Map (with existing well status and information, API numbers)
Map 2 – Overall Site Plan

Exhibit 3 – FERC Order
Exhibit 4 – Stratigraphic Columns
Exhibit 5 – Anticline/Syncline Structure Map
Exhibit 6 – Camillus Shale Isopach Map
Exhibit 7 – Camillus Shale Structure Map
Exhibit 8 – Gallery 2 Cross-Sections
Exhibit 9 – Logs for wells 30, 31 and 45
Exhibit 10 – Well Schematic and Plugging Reports for Wells 30, 31 and 45
Exhibit 11 – Well Status and Condition Report
Exhibit 12 – 2011 Directional Surveys for wells 30, 31 and 45
Exhibit 13 – May 1998 MIT Report for Well 30
Exhibit 14 – Core Descriptions for Wells 58 and 59 (see references, Section 20(f))
Exhibit 15 – Rock Mechanics Report for Wells 58 and 59 (see references, Section 20(g))
Exhibit 16 – Geomechanical Evaluation for Gallery 2 (see references, Section 20(h))
Exhibit 17 – Seismic data and updated seismic risk map
Exhibit 18 – Well Drilling Procedures for Wells 30A and 31A
Exhibit 19 – Subsidence Monitoring Program and 2011 Subsidence Survey Report
Exhibit 20 – Seneca Storage Facility Emergency Shutdown System Procedures and Emergency Action Plan
Exhibit 21 – Brine Interface Test Procedure
Exhibit 22 – Storage Rights Affidavit
Exhibit 23 – Environmental Assessment Form
Exhibit 24 – FERC Environmental Report